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A Comparison of Practice Patterns of New and Established Physicians: California, 1978

by

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I. Introduction

The objective of this paper is to determine whether or not there are measurable differences between the billing and practice patterns of new physicians as opposed to those who have established practices. The overall data base used for the analysis is described in detail in an earlier paper in this series.[1] The data file is based on a large sample of California solo-practice physicians. For every physician in the sample, all claims submitted to Medicare or Medicaid during the first quarter of 1978 are included. Data were analyzed for three specialties: general (family) practice, surgery and internal medicine. These specialties are self-defined. The physician has indicated that he considers himself to be a particular type of specialist; specialty designation does not necessarily indicate board eligibility or certification. Claims data for each specialty were analyzed for two groups: those who were defined as "new" and those who were considered "established." In order to avoid eccentricities attributable to the difficulties of first establishing a practice, we used a cohort of "new" physicians who had been in practice for over two years at the time of study. Established physicians had been in practice five years or longer.

Physicians entered our sample at the time they were first issued a Blue Shield number. This would normally occur at the time that a physician established a private office although some training programs do obtain Blue Shield numbers and bill for their most senior residents. New physicians in this study obtained Blue Shield numbers between 1972 and 1975; established physicians had obtained their numbers before 1972.

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[1] Sulvetta, Margaret B. "Analysis of Changes in Physicians' Medicare Revenues." Urban Institute Working Paper: 1250-04, 1981.

Physicians in the new group were not necessarily either young or recently trained since older physicians who migrated to California would also have recently applied for a California Blue Shield number. The new cohort would, however, include all of the most recently trained physicians in the sample. In addition, California's physician licensure law discourages older physicians from establishing practice in the state by requiring a state examination of all but the most recent graduates, thus increasing the tendency for new Blue Shield numbers to be issued largely to doctors who have recently completed training.

Because physicians were allowed to define their own specialty, there may be differences between the two groups other than the timing of training. Physicians who defined themselves as surgeons in the 1970s, for example, probably received more training in the field than those who defined themselves as surgeons fifteen or twenty years earlier. Differences in behavior could therefore be attributable to the amount, rather than the timing, of training. In addition, physicians who defined themselves as general practitioners at any time during the period covered by our overall study (1974-1978) were considered to be general practitioners for the purposes of this study even if they had redefined their specialty as family practice by the first quarter of 1978. Data for physicians in the larger sample who defined themselves exclusively as family practitioners were not analyzed for this report.

Study design. There are three areas in which this particular data base allows us to examine differences between new and established physicians. The first is participation in public programs: are new doctors as willing to see Medicare and Medicaid patients as are established doctors? Are they more willing? Do they see larger or smaller numbers of these patients? For physicians who do participate in the programs, two general types of additional questions can be asked: how do billing patterns of the two groups differ and how does practice itself differ in terms of the kinds and frequency of services delivered?

California Medicaid in 1978 paid physicians a flat fee schedule which applied to all physicians regardless of specialty or geographic region. Such an arrangement should not influence billing patterns since the amounts billed to Medicaid or to other types of patients will not influence the amounts actually received from Medicaid. Medicare's reimbursement system is quite different. The amount paid by the program is based on the lower of two figures: the physician's own "customary" fee and the fee considered to be "prevailing" in the medical community for the particular service and medical specialty. The "customary" fee for a procedure for any one physician is based on the median of his billed charges from the previous year. The "prevailing" fee, which was originally the 75th percentile of all customary fees, is now indexed in such a way as to limit annual increases. A new physician, during the first year of practice in a specific area, does not yet have a customary fee. Instead he is paid either what he bills or the 50th percentile of billings by other physicians in the same specialty for the same service, whichever is lower. In all instances, Medicare payments are limited to 80 percent of the allowed amount; the patient is expected to pay the remaining 20 percent.

After a physician has been in practice for a calendar year, his own billings are used to establish his customary fees. Although in theory an established physician can raise his profile at will by raising fees, in practice there is a strong incentive to establish as high a profile as possible in the first year of billing. A physician who wishes to alter his Medicare profile must, after all, wait at least a year after making the decision and altering fees before increased payments from Medicare will result. In addition, he must subject his self-pay patients to an abrupt change in charges, a process which is likely to be distressing even if fees were originally below the local market level. The only contrary influence on a new physician is the desire not to set fees so high that he is unable to attract patients.

Practice patterns of new physicians can be expected to differ from those of established physicians in a variety of ways. The first question is whether newly-trained physicians tend to make a greater use of ancillary services than do older physicians, either because modern training places a heavy emphasis on the use of such services or because inexperience makes a physician less comfortable with decision-making and leads him to require more information for each decision. In addition to the numbers of services offered per patient, we can examine the actual types of services: do new surgeons, for example, do the same kinds of surgery at the same rates as older ones? Although our data base does provide accurate information on all services actually performed by physicians, there are limits to the available information on pathology and radiology services. Only those charges appear for which the primary physician billed under his own provider number. Services billed directly by a laboratory or radiology group do not appear in these data so that differences in the numbers of services for laboratory or radiology could be attributable either to actual differences in practice or simply to differing financial arrangements for the provision of laboratory and radiology services.

II. Summary of Findings

Program Participation. Table I displays the number and the percentage of physicians participating in the two programs as well as the size of the two physician samples. A participating physician was defined as one who submitted at least one bill in the program in question. Participation is higher, in both programs, for old than for new physicians. Within Medicaid, 70 percent of established general practitioners participated while only 62 percent of new general practitioners did so. The rate for established surgeons was 72.5 percent as compared with 52.6 percent for new surgeons; 67.3 percent of established internists participated while only 51.7 percent of new internists did so.

Table I also shows the numbers and percentages of physicians with both assigned and unassigned billings to Medicare as well as their overall participation in Medicare. For those physicians who accepted assignment, the percentage who submitted mandatory assigned claims and voluntary assigned claims are also shown. Mandatory assigned patients are the aged poor who are eligible for Medicaid; a physician is not allowed to bill these patients personally but must instead bill Medicare for them, a process known as accepting assignment. Voluntary assigned patients are those for whom the physician has accepted assignment but who could legally have been billed directly by the physician. Unassigned patients pay the physician themselves and submit their own claims to Medicare. The differences in income to the physician among those groups may be considerable. Since current limits on the rise in prevailing fees curtail the amounts allowed by Medicare, and since Medicare pays only 80 percent of the allowed amount, a physician may increase his collections considerably by charging the patient whatever he wishes, in which case the patient may submit an unassigned claim to Medicare. This also relieves the

TABLE I

PERCENT PROGRAM PARTICIPATION FOR ESTABLISHED AND NEW PHYSICIANS, BY SPECIALTY AND CLAIM TYPE

		Established MDs	New MDs
General Practitioners (n = 1007 for established MDs) (n = 200 for new MDs)			
Medicare:	Mandatory Assigned	71.4	54.5
	Voluntary Assigned	58.9	45.0
	Non-assigned	76.2	54.0
	Total all Claim Types	78.9	64.0
Medicaid		70.0	62.0
General Surgeons (n = 651 for established MDs) (n = 97 for new MDs)			
Medicare:	Mandatory Assigned	70.2	48.5
	Voluntary Assigned	64.2	45.4
	Non-assigned	72.6	44.3
	Total all Claim Types	77.3	57.7
Medicaid		72.5	52.6
Internists (n = 804 for established MDs) (n = 234 for new MDs)			
Medicare:	Mandatory Assigned	70.0	53.0
	Voluntary Assigned	68.4	52.1
	Non-assigned	75.9	47.9
	Total all Claim Types	79.0	62.4
Medicaid		67.3	51.7

physician of the obligation to prepare a claim on the form required by the Medicare carrier. At the same time, refusing to accept assignment increases the physician's risk of bad debt and may increase the age of his receivables if the Medicare carrier is ordinarily prompt in its payments. The decision by a physician to accept or not accept assignment, then, is a complex one dependent on the physician's perception of the patient's ability to pay as well as the physician's relationship with the local Medicare carrier.

Many physicians who participate in Medicare will do so in all subcategories, submitting both mandatory and voluntary assigned claims for some patients and billing other patients directly. Since there is no obligation to be consistent with a given patient, physicians may submit assigned claims for a patient for some categories of service, such as hospital visits, while billing the same patient directly in other categories, such as office visits. Other physicians do not do so, either limiting their practice to unassigned patients or accepting assignment on all who are Medicare eligible. As a result, the percentage of participation for each Medicare subcategory is very slightly lower than that of Medicare as a whole.

New physicians in all three specialties show consistently lower participation rates in Medicare as a whole, and in each of the Medicare subcategories, than do established physicians. Overall Medicare participation rates are 78.9 percent for established and 64 percent for new general practitioners; 77.3 percent for established and 57.7 percent for new general surgeons and 79.0 percent for established and 62.4 percent for new internists. The pattern within each subcategory is also similar: new physicians participate at a lower rate than established physicians. The phenomenon does not seem to be based on an avoidance of lower-paying patients since among new doctors the rates for submission of unassigned Medicare claims, for which the physician presumably expects to receive full payment, are in fact even lower than the rates for mandatory assigned Medicare claims.

Table II, which displays the number of patients per participating physician, further illuminates this difference between new and old physicians. Not only are new physicians less likely to participate in Medicare than are established physicians, those who do so have fewer Medicare patients. The average number of Medicare patients, for example, seen by an established general practitioner, is 83.31 while for a new general practitioner the average is only 50.90. In Medicaid, however, the opposite is true: participating new physicians see, on the average, more Medicaid patients then do participating established physicians. For general practitioners the average is 97.20 patients for established and 122.06 patients for new physicians. The figure is most striking for general surgeons, where the number of patients per doctor is 54 percent higher; the figures for general practice and internal medicine are 26 percent and 22 percent higher respectively.

For the Medicare program, this pattern is consistent with the observation that a physician's patients tend to age as the practitioner himself does, leading both to increased participation in Medicare and to increased numbers of Medicare patients per doctor. Within Medicaid, the figures suggest that there may be a tendency for some new physicians to consciously "specialize" in providing service to Medicaid recipients. Practice location, coupled with word-of-mouth advertising that a physician is eager to see Medicaid recipients, could easily lead to such specialization. Since California has a relatively high physician to population ratio, especially in some attractive urban areas, such specialization could be expected as a practical response to the difficulties of establishing a more traditional practice.

TABLE II

PATIENTS PER PARTICIPATING PHYSICIAN FOR ESTABLISHED AND NEW PHYSICIANS, BY SPECIALTY AND PROGRAM

	Established MDs	New MDs
General Practitioners		
Medicare	83.31	50.90
Medicaid	97.20	122.06
General Surgeons		
Medicare	47.28	30.91
Medicaid	33.93	52.24
Internists		
Medicare	121.37	70.97
Medicaid	34.10	41.60

Billing patterns. Tables III and IV show the average billed amounts and average allowed amounts for both old and new physicians for a variety of groups of procedures. The actual types of services and the proportions of each service included in each group can vary between established and new physicians and between the two programs. Charges and allowed amounts are shown for Medicare as a whole, and for Medicaid. As a general rule, new physicians both bill more and are allowed more than established physicians. This trend is least pronounced among general practitioners and most among general surgeons. Among Medicare claims the average billed price of an office visit for an established patient, for example, is 6 percent higher for a new general practitioner, 5 percent higher for a new internist and 21 percent higher for a new general surgeon. Claims submitted to Medicaid for the same service are 26 percent higher for a new general practitioner; 16 percent higher for a new internist and 21 percent higher for a new general surgeon. There is only one area in which this trend is distinctly reversed: surgical practice by general practitioners. In both programs, established general practitioners charge more for surgery than do new general practitioners; this pattern is much more pronounced in the case of surgery for Medicaid patients. The mix of surgical procedures which leads to this pattern is discussed in detail later in this paper. Table IV indicates that these overall higher billings do result in higher fees being paid to new physicians as opposed to established physicians for the same service. The ratios between billed and allowed amounts, which are shown in Table V, do not show any consistent pattern. For some procedure groups, such as new patient office visits to general practitioners, established physicians have a higher billed/allowed

TABLE III

AVERAGE BILLED AMOUNT FOR SELECTED PROCEDURE GROUPS FOR ESTABLISHED AND NEW PHYSICIANS, BY PROGRAM

	Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Office visit (new)	$ 32.43	$ 33.80	$ 25.88	$ 28.22
Office visit (established)	16.10	17.06	15.44	19.49
Hospital visit	23.58	27.31	26.32	31.66
Surgery	25.25	23.97	110.68	97.57
General Surgeons				
Office visit (new)	32.93	45.59	28.25	35.02
Office visit (established)	17.61	21.39	18.29	21.53
Hospital visit	24.96	30.23	27.52	31.68
Consultation	54.02	79.15	54.83	74.89
Surgery	319.01	367.65	400.17	530.89
Internists				
Office visit (new)	55.95	66.06	33.07	41.04
Office visit (established)	20.85	21.97	19.52	22.74
Hospital visit	27.29	29.76	27.98	30.37
Consultation	81.91	86.45	84.40	84.16

TABLE IV

AVERAGE ALLOWED AMOUNT FOR SELECTED PROCEDURE GROUPS FOR ESTABLISHED AND NEW PHYSICIANS, BY PROGRAM

	Total Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Office visit (new)	$ 28.42	$ 31.26	$ 19.78	$ 24.55
Office visit (established)	13.67	14.61	11.03	13.13
Hospital visit	19.27	22.64	18.40	22.14
Surgery	21.35	20.38	69.70	57.66
General Surgeons				
Office visit (new)	28.47	38.65	20.25	24.16
Office visit (established)	14.26	17.56	11.73	14.74
Hospital visit	20.59	25.13	18.26	21.23
Consultation	45.26	62.68	33.13	37.39
Surgery	256.76	302.07	200.71	245.69
Internists				
Office visit (new)	46.99	52.09	24.08	28.52
Office visit (established)	17.56	18.14	12.55	13.76
Hospital visit	22.04	23.46	17.53	19.17
Consultation	65.59	71.56	44.38	44.17

TABLE V

RATIO OF BILLED TO ALLOWED AMOUNTS FOR SELECTED PROCEDURE GROUPS FOR ESTABLISHED AND NEW PHYSICIANS BY PROGRAM

	Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Office visit (new)	1.14	1.08	1.31	1.15
Office visit (established)	1.17	1.16	1.40	1.48
Hospital visit	1.22	1.21	1.43	1.43
Surgery	1.18	1.18	1.58	1.69
General Surgeons				
Office visit (new)	1.16	1.18	1.39	1.45
Office visit (established)	1.23	1.22	1.56	1.46
Hospital visit	1.21	1.20	1.51	1.49
Consultation	1.19	1.26	1.65	2.00
Surgery	1.24	1.21	1.99	2.16
Internists				
Office visit (new)	1.19	1.27	1.37	1.44
Office visit (established)	1.19	1.21	1.56	1.65
Hospital visit	1.24	1.27	1.60	1.58
Consultation	1.25	1.21	1.90	1.91

ratio. For others, such as new patient office visits to surgeons, new physicians have higher ratios.

There are two elements which determine the amount a physician receives for a given number of services: the average price per service and the average intensity of the services delivered. Although procedural coding is presumably designed to establish a clear-cut relationship between a specific service and an intensity code, in fact the individual physician has considerable latitude in assigning intensity to his services, especially in areas such as office visits.

The procedural coding system used in this study is the 1974 Revision of the California Relative Value Scale, a system based on the American Medical Association's Common Procedural Terminology (CPT). This system provides five different service codes for an office visit with a new patient and seven different service codes for an office visit with an established patient. These are arranged in what is presumed to be a hierarchy of intensity; for the established patient the list is as follows:

Service	Unit Value
Minimal service	2.4
Brief examination	3.5
Limited examination	5.2
Intermediate re-examination	6.5
Extended re-examination	8.7
Comprehensive re-examination	13.0
Comprehensive re-examination, complicated by chronically disabling condition	16.0

New patients' visits are described in the same way except that "minimal" and "extended" are eliminated and the most comprehensive examination is defined differently. Although the definitions for each service are spelled out in some detail in the coding manual, these are subject to considerable variation in interpretation since few physicians would usually distinguish among seven types of visits. What the coding does is to allow a physician some flexibility in the amounts charged for office visits without changes in his customary charges. Since the customary charge profile is established independently for each of the billing code, and since no controls exist over the relative use of the different codes, reimbursement may be increased by shifting the billings in the direction of higher codes.

Tables VI and VII display the service intensity which underlies the billed amounts described in earlier tables. In Table VI we see the Relative Value Scales for a selected group of procedures similar to those shown in the tables displaying billed and allowed amounts. As with billings, service intensities for new physicians are consistently higher than for established physicians with the exception of the surgery practiced by general practitioners. In Medicare, general practice surgery shows a very slightly higher service intensity for old physicians than for new ones and within Medicaid the pattern of increased intensity is marked. Since surgical procedures do not allow for the same kind of changes in intensity as do office visits, higher RVS units mean that different, more intensive, procedures have been performed.

Table VII was obtained by dividing the RVS for each type of service into the average billed amount for the same service. What results is an average price per RVS unit for the two physician groups. In general, the behavior of the two groups in terms of pricing is fairly similar. The most striking exception is among general surgeons in the area of both consultation and surgery where new physicians bill at a higher unit price than do established physicians. New general practitioners also bill at a higher unit price for

TABLE VI

AVERAGE RELATIVE VALUE SCALES FOR SELECTED PROCEDURE GROUPS FOR ESTABLISHED AND NEW PHYSICIANS, BY PROGRAM

	Total Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Office visit	17.07	19.87	17.52	21.69
Hospital visit	23.18	27.48	27.49	32.25
Surgery	48.11	46.79	123.93	85.79
General Surgeons				
Office visit	18.20	25.28	18.94	24.60
Hospital visit	24.55	28.89	27.58	31.45
Consultation	49.08	57.96	51.83	57.86
Surgery	265.89	286.92	296.79	355.24
Internists				
Office visit	19.99	21.47	19.21	21.11
Hospital visit	25.03	26.33	25.95	27.98
Consultation	62.66	63.03	66.02	64.72

TABLE VII

INDEX OF AVERAGE BILLED AMOUNT PER RVS UNIT FOR ESTABLISHED AND NEW PHYSICIANS, BY PROGRAM

	Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Office visit	.97	.91	.93	.94
Hospital visit	1.02	.99	.96	.98
Surgery	.52	.51	.89	1.14
General Surgeons				
Office visit	1.03	.97	1.03	.97
Hospital visit	1.02	1.05	1.00	1.01
Consultation	1.10	1.37	1.06	1.29
Surgery	1.20	1.28	1.35	1.49
Internists				
Office visit	1.09	.94	1.05	1.12
Hospital visit	1.09	1.13	1.08	1.09
Consultation	1.31	1.37	1.28	1.45

surgery than their established counterparts. Among internists, unit prices for new physicians are slightly higher for most procedures than are unit prices for established physicians.

In summary, then, we have seen that new physicians who participate in Medicare and Medicaid bill higher amounts per service performed than established physicians. In general, the higher billings are attributable to higher RVS units for a type of service rather then to higher prices per RVS unit. In some areas, such as consultations and surgery, the price per RVS unit is also higher.

Practice Patterns. Table VIII displays the number of services provided per patient for old and new physicians for selected services under both Medicare and Medicaid. The patient population for these calculations was defined as the total number of patients for whom any claim was submitted under the program in question. As is evident from Table VIII, new doctors do not, on the average, see patients more often or order more services on them than do established physicians.

There are several additional findings of interest. First of all the number of radiology services shown in these tables for all physician groups and all programs is very low. This presumably reflects the general tendency for solo generalist physicians not to provide radiology services in their own offices but instead to refer such services to a hospital or radiology group. Referred studies for which the bill was submitted by a physician other than the one in the study population do not appear among these data.

Pathology services--laboratory tests either performed in a physician's office or performed in a laboratory but billed through the primary physician--appear with much greater frequency than do radiology studies. There is a

TABLE VIII

SERVICES PER PATIENT FOR SELECTED PROCEDURE GROUPS FOR ESTABLISHED AND NEW PHYSICIANS, BY PROGRAM

	Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Office visits	2.06	1.82	1.43	1.41
Hospital visits	.74	1.05	.11	.18
Other med.	.50	.59	.43	.53
Surgery	.15	.09	.06	.03
Radiology	.07	.07	.04	.05
Pathology	.57	.50	.34	.25
General Surgeons				
Office visit	1.16	.96	1.10	1.14
Hospital visits	.64	1.21	.27	.33
Other med.	.22	.17	.24	.18
Surgery	.47	.51	.35	.28
Consultation	.10	.14	.07	.07
Radiology	.02	.01	.03	.01
Pathology	.16	.40	.12	.30
Internists				
Office visits	1.81	1.54	1.37	1.20
Hospital visits	1.43	2.27	.57	1.02
Other med.	.52	.51	.43	.57
Consultation	.04	.12	.04	.09
Radiology	.08	.10	.06	.06
Pathology	.83	.87	.43	.66

strong inter-specialty variation in the numbers of such tests. Internists, both new and established, billed for more of these services per patient than did general and family practitioners; surgeons billed the least. New internists billed considerably more pathology services per patient under Medicaid than established physicians but the billing patterns of both new and established internists for pathology services under Medicare was quite similar. The most striking difference between new and established physicians is in the use of pathology by surgeons. Established surgeons billed for very few pathology services per patient; new surgeons billed for more than twice as many services under both Medicare and Medicaid. This may well reflect a trend in office organization for the specialty rather than a new pattern in test ordering. Revenues from laboratory tests can provide a substantial addition to income; new surgeons may well be organizing their practices in response to the incentive provided by existing payment methods.

Another area of interest is "other medicine," a category which includes a variety of non-surgical office procedures including electrocardiograms, injections and specialized testing. General practitioners and internists provided more of these services, as might be expected, than did surgeons. Interestingly, new surgeons provided somewhat fewer services in this category than did established surgeons while new general practitioners and internists provided somewhat more than their established counterparts.

Table VIII also shows some interesting patterns with respect to the relative balance between hospital and office visits within the Medicare program. For each of the three specialties, new physicians made more hospital visits per patient than did established physicians. The ratio between hospital visits and office visits is also higher, for each specialty, for new than for established physicians. The same trend, although much less marked, is seen within the Medicaid program. Although the data clearly show a skewing of new practice in the direction of hospital care, they do not necessarily indicate that new physicians hospitalize patients at a higher rate or visit the hospitalized more frequently. This is because the underlying patient population is not fixed but is defined by the number of claims submitted. If, for example, new physicians were building practices during the study period by accepting responsibility for Medicare and Medicaid eligibles admitted to the hospital from an emergency room, their claims would show a pattern such as this without reflecting a true variation in hospitalization rates. The pattern is marked enough, however, to warrant further exploration.

The number of ancillary services delivered may be described in terms of the ratio between ancillary services and office visits as well as the number of tests per patient. Table IX displays such an analysis for radiology, pathology and "other medicine." Here a pattern of increased use by new physicians appears more clearly. New general practitioners and new internists both provided more "other" services relative to the number of office visits than did established general practitioners and internists. This category is very slightly lower for new than for established surgeons. For pathology procedures new general practitioners are quite similar to established general practitioners with respect to Medicare and provide fewer services under Medicaid. New surgeons and new internists, however, both show higher rates of use of pathologic services relative to office visits than do established physicians in the same category.

Surgical Practice. As was noted earlier in this paper, surgery by general practitioners, particularly under Medicaid is the one area where

TABLE IX

RATIO OF ANCILLARY SERVICES TO OFFICE VISITS FOR SELECTED SERVICES FOR NEW AND ESTABLISHED PHYSICIANS, BY PROGRAM

	Medicare		Medicaid	
	Estab. MDs	New MDs	Estab. MDs	New MDs
General Practitioners				
Other medicine	.24	.32	.30	.38
Radiology	.03	.04	.03	.03
Pathology	.28	.28	.24	.18
General Surgeons				
Other medicine	.19	.17	.19	.15
Radiology	.02	.01	.03	.01
Pathology	.14	.41	.11	.26
Internists				
Other medicine	.29	.33	.31	.47
Radiology	.04	.08	.05	.05
Pathology	.46	.57	.30	.55

established physicians billed for larger amounts and higher RVS values than new physicians. In order to explore this phenomenon in more detail, we have analyzed the surgical procedures most commonly billed under Medicaid for both general practitioners and surgeons. The results are shown in Tables X and XI.

Of particular interest are the numbers of procedures performed per physician, a figure which reflects the tendency of new physicians to see larger numbers of Medicaid patients than established physicians. For almost every specific procedure, more procedures are performed per physician by new than by established physicians. If, however, these figures are converted to procedures per patient by using the data in Table II, the number of specific procedures per patient are much more similar with no clear pattern emerging between the two groups.

The lower service intensity scales for new than for established general practitioners appear to be based on two elements: the preponderance of arthrocentesis (a procedure with a relatively low RVS scale) among new doctors coupled with the performance of therapeutic abortions by established physicians. Our sample does not include a single instance of a Medicaid abortion billed by a new physician during the study period; 135 such procedures were billed by established physicians. The first quarter of 1978 was a period in which there were no federal matching funds for abortions although the State of California did pay for those procedures. It is possible that only physicians with well-established abortion practices were willing to accept Medicaid patients for this procedure because of the national publicity regarding the withdrawal of federal funds and the resulting uncertainties regarding eventual payment. The 135 reported abortions billed by established physicians may well have been performed by a relatively small number of physicians since these

TABLE X

SURGICAL PROCEDURES MOST FREQUENTLY BILLED TO MEDICAID BY ESTABLISHED PHYSICIANS, IN RANK ORDER

CPT Code	Procedure	Number of Services	Services Per MD	Services Per Patient
General Practitioners (n = 708)				
20610	arthrocentesis, major joint	240	.339	.0035
59400	total obstetrical care	189	.267	.0027
59850	therapeutic abortion	135	.191	.0019
58300	IUD insertion	114	.161	.0017
17100	destruction, skin lesion	109	.154	.0016
54150	circumcision	96	.136	.0014
20550	injection, tendon	89	.125	.0013
17000	destruction, facial lesion	64	.090	.0009
10060	incision & drainage, infected	63	.089	.0009
45300	sigmoidoscopy	42	.059	.0006
69200	foreign body, ear	29	.041	.0004
20605	arthocentesis, intermediate joint	25	.035	.0004
General Surgeons (n = 470)				
44950	appendectomy	157	.334	.0098
20610	arthrocentesis, major joint	134	.285	.0084
19120	excision of breast cyst/lesion	117	.249	.0073
47600	cholecystectomy	111	.236	.0070
47605	cholecystectomy & cholangiography	86	.183	.0054
45300	sigmoidoscopy	76	.162	.0048
10060	incision & drainage, infected	58	.123	.0036
49000	exploratory laporoscopy	37	.079	.0024
11402	excision, benign lesion	35	.074	.0022
49505	hernia repair	33	.070	.0020
59400	total obstetrical care	33	.070	.0020
11440	excision, skin lesion	25	.053	.0016

TABLE XI

SURGICAL PROCEDURES MOST FREQUENTLY BILLED TO MEDICAID BY NEW PHYSICIANS, IN RANK ORDER

CPT Code	Procedure	Number of Services	Services Per MD	Services Per Patient
General Practitioners (n = 124)				
20610	arthrocentesis, major joint	73	.589	.0048
59400	total obstetrical care	29	.234	.0019
58300	IUD insertion	25	.202	.0017
54150	circumcision	19	.153	.0013
45300	sigmoidoscopy	14	.113	.0009
20550	tendon injection	14	.113	.0009
17000	destruction, facial lesion	14	.113	.0009
10060	incision & drainage, infected	12	.097	.0007
17100	destruction, skin lesion	8	.065	.0005
20605	arthrocentesis, intermediate joint	8	.065	.0005
General Surgeons (n = 51)				
44950	appendectomy	27	.529	.0101
47600	cholecystectomy	22	.431	.0083
19120	excision of breast cyst/lesion	19	.373	.0071
59400	total obstetrical care	16	.314	.0060
45300	sigmoidoscopy	12	.235	.0045
47605	cholecystectomy & cholangiography	12	.235	.0045
11402	excision, benign lesion	9	.176	.0034
10060	incision and drainage infected	7	.137	.0026

procedures are often performed in clinics or hospital outpatient departments which specialize in them. The greater numbers of arthrocenteses (removal of fluid from a swollen joint) may reflect a shift in practice patterns in the direction of a more aggressive approach to chronic arthritis since the rate of performance of this procedure is greater for new physicians than would be explained by the increased numbers of patients alone.

Rankings for Medicare surgical procedures, in which a much less marked tendency towards increased intensity in the services provided by established physicians was observed, are not shown. Within Medicare, new and established general practitioners billed for a very similar group of minor surgical procedures. The modest increased intensity of service among established physicians was attributed simply to small differences between the two groups in the frequency with which these procedures were performed.

III. Conclusion

Our data show that physicians who have recently entered practice differ from their more established counterparts in a variety of ways. We found that established physicians were more likely to participate in both Medicare and Medicaid than their new counterparts in the same specialty. Among those who participated in Medicare, established physicians also saw more patients on the average than did new physicians. The pattern within Medicaid was reversed, however, with new participating physicians seeing more patients per physician than established participating physicians.

The most striking differences between new and established physicians were found in billing patterns. New physicians generally billed more, and were allowed more, than established physicians. Although the higher billings were associated with slightly higher prices per RVS unit, the major cause of the increase was higher RVS intensity in almost every group of services. Within groups such as office visits higher RVS values are presumably attributable to a tendency among new physicians to use more intensive codes in describing the same service than would established physicians. A seven-minute office visit, for example might legitimately be described as "minimal," in which case it would be worth 2.4 units, or as "brief" (3.5 units) or as "limited" (5.2 units). New physicians use more of the higher, and old physicians more of the lower, codes. In areas such as surgery, where codes are related to specific procedures, higher RVS values indicate a different, more intensive, group of services. In these service-specific areas new physicians do not always deliver more intensive services than do established physicians; surgery performed by established general and family practitioners on Medicaid patients is considerably more intensive than that performed by new members of the same specialty. This observation is also true, but less pronounced, within Medicare. An analysis of the most commonly billed surgical procedures shows that even established general practitioners are not performing many major surgical procedures. The marked difference between the two groups is instead attributable to the fact that no abortions were performed by new general practitioners coupled with the fact that the new practitioners performed more of some relatively low RVS procedures, particularly arthrocenteses, than the old.

When actual practice patterns were examined, the difference between new and old physicians proved to be less striking. New doctors did not seem to see patients more often or to order a great many more ancillary tests per patient than established physicians. Some specific trends, such as the marked tendency for new surgeons to bill for more pathology services than old surgeons, can be observed, but this could be attributed to the organization of office practice rather than to trends in test ordering.

In summary, then, new physicians differ most markedly from older physicians in areas relating to the economic aspects of practice: that is, in the relative numbers of Medicare and Medicaid patients seen and in their billing patterns. New physicians do not, on average, see their patients more often or order more laboratory tests.

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